

IN THE CLAIMS:

CLAIMS

1. (Original) An array type choke coil characterized by comprising:
a coil group arranging a plurality of terminal-integrated type coils formed by bending a metal sheet in a preset development form and having a set positional relationship; and
a magnetic material burying therein the coil group.
2. (Original) An array type choke coil according to claim 1, wherein the coil group structure arranges the axes of coil constituting the coil group in parallel, where the center point of at least one coil selected from the plurality of coils and the center point of a coil other than the selected coil are in a staggered arrangement.
3. (Original) An array type choke coil according to claim 2, wherein a predetermined inductance value is obtained by changing the distance between the center point of at least one coil selected from the coil group and a center point of at least one coil selected from the plurality of coils other than the selected coil.
4. (Original) An array type choke coil according to claim 2, wherein a predetermined inductance value is obtained by changing the height of a center point of at least one coil selected from the coil group and a center point of at least one coil selected from the plurality of coils other than the selected coil.
5. (Original) An array type choke coil according to claim 2, wherein at least one coil selected from the coil group and both coils immediately adjacent to the selected coil are in a V-form or inverted V-form arrangement, to make a direction of magnetic flux extending through the coil caused upon flow of a current to the selected coil and a direction of magnetic flux extending through the coil caused upon flow of a current to the two coils arranged immediately adjacent different in direction from each other.
6. (Original) An array type choke coil according to claim 2, wherein at least one coil selected from the coil group and both coils immediately adjacent to the selected coil are in a V-form or inverted V-form arrangement, to make a direction of a magnetic flux caused upon flow

of a current to the selected coil and a direction of magnetic flux caused upon flow of a current to the two coils arranged immediately adjacent the same in direction.

7. (Original) An array type choke coil according to claim 2, wherein the coils constituting the coil group have the number of turns of $(N + 0.5)$ turns (where N is an integer equal to or greater than 1), to provide an arrangement structure stacking an N -turn portion of the coil selected from the coil group and an $(N + 0.5)$ -turn portion of the coil immediately adjacent to the selected coil.

8. (Currently Amended) An array type choke coil according to claim 5 ~~or 6~~, wherein a predetermined inductance value is obtained by changing respective distances between a center point of the coil selected and center points of the both coils arranged immediately adjacent.

9. (Original) An array type choke coil according to claim 1, wherein the coil group arranges the coils such that center points of the plurality of coils constituting the coil group are on a same plane.

10. (Original) An array type choke coil according to claim 9, wherein a predetermined inductance value is obtained by changing the distance between center points of two coils immediately adjacent among the plurality of coils.

11. (Original) An array type choke coil according to claim 9, wherein the coil group is arranged such that magnetic fluxes in the coils caused upon flow of currents to the plurality of coils alternate in direction.

12. (Original) An array type choke coil according to claim 9, wherein the coil group is arranged such that magnetic fluxes in the coils caused upon flow of currents to the plurality of coils are same in direction.

13. (Original) An array type choke coil according to claim 1, wherein the coil group structure arranges the axes of coils constituting the coil group in parallel, having a distance between the center point of at least one coil selected from the plurality of coils and the center point of a coil immediately adjacent to the selected coil is half or smaller than the sum of the outer diameter of the selected coil and the diameter of the adjacent coil, wherein at least one turn portion of the selected coil is arranged in a manner meshing with the adjacent coil.

14. (Currently Amended) An array type choke coil according to claim 13, wherein the selected coil and the adjacent coil have the number of turns of N turn (where N is an integer equal to or greater than 2), to provide an arrangement such that $(N - 1)$ turn portion of the ~~selected~~ adjacent coil is in mesh with the selected coil.

15. (Original) An array type choke coil according to claim 13, wherein the coil group is arranged such that the difference between the outer diameter and the inner diameter of the selected coil and a difference between the outer diameter and the inner diameter of the adjacent coil are equal, and the distance between the center point of the selected coil and the center point of the adjacent coil coincides with half of the sum of the outer diameter of the selected coil and the inner diameter of the adjacent coil.

16. (Original) An array type choke coil according to claim 13, wherein a predetermined inductance value is obtained by changing the distance between the center point of at least one coil selected from the coil group and the center point of a coil adjacent to the selected coil.

17. (Original) An array type choke coil according to claim 13, wherein the coil group is arranged such that the direction of magnetic flux in a coil of upon flow of a current to at least one coil selected from the coil group and the direction of magnetic flux upon flow of a current to a coil adjacent the selected coil are same in direction.

18. (Original) An array type choke coil according to claim 13, wherein the coil group is arranged such that the direction of magnetic flux in a coil of upon flowing a current to at least one coil selected from the coil group and the direction of magnetic flux upon flow of a current to a coil adjacent the selected coil are different.

19. (Currently Amended) An array type choke coil according to claim 9 ~~or 13~~, wherein the coil group structure arranges the plurality of coils all in line.

20. (Currently Amended) An array type choke coil according to claim 1, ~~2, 9 or 13~~, wherein at least one coil selected from the plurality of coils is arranged in a position deviated from the other coils arranged in line.

21. (Currently Amended) An array type choke coil according to claim 1, ~~2, 9 or 13~~, wherein the coil group is arranged such that selected two or more input terminals or selected two or more output terminals or both are arranged exposed at a same surface.

22. (Original) An array type choke coil according to claim 1, wherein the coil group has the plurality of coils constituting the coil group buried within the magnetic material.

23. (Original) An array type choke coil according to claim 22, wherein a predetermined inductance value is obtained by changing the intervals between the plurality of coils.

24. (Original) An array type choke coil according to claim 22, wherein the coil group is arranged such that magnetic fluxes in the coils caused upon flow of currents to the plurality of coils are in the same direction.

25. (Original) An array type choke coil according to claim 22, wherein the coil group is arranged such that magnetic fluxes in the coils caused upon flow of currents to the plurality of coils alternately in direction.

26. (Original) An array type choke coil according to claim 22, wherein the plurality of coils have the number of turns of $(N + 0.5)$ turns (where N is an integer equal to or greater than 1), to provide an arrangement structure where coils in upper and lower positions have respective 0.5 turn portions lying on a same plane.

27. (Original) An array type choke coil according to claim 22, wherein all of the input terminals or all of the output terminals of the plurality of coils or both are exposed at the same surface.

28. (Currently Amended) An array type choke coil according to claim 1, ~~2, 9, 13 or 22~~, wherein the magnetic material is formed from at least one of the group consisting of a ferrite magnetic material, a composite of a ferrite magnetic powder and an insulating resin and a composite of a metal magnetic powder and an insulating resin.

29. (Currently Amended) An array type choke coil according to claim 1, ~~2, 9, 13 or 22~~, wherein an insulation film is formed on the surface of the coil.

30. (Currently Amended) An array type choke coil according to claim 1, ~~2, 9, 13 or 22~~, wherein the coil group has at least two terminals exposed at respective different surfaces.

31. (Currently Amended) An array type choke coil according to claim 1, ~~2, 9, 13 or 22~~, wherein the coil group has at least one terminal exposed at ~~at~~ least two surfaces the bottom surface and the surrounding surface thereof.

32. (Currently Amended) An array type choke coil according to claim 1, ~~2, 9, 13 or 22~~, wherein the coil group terminal portions which are exposed at the surface have a substrate layer containing nickel (Ni) or a nickel (Ni), and an uppermost layer which is formed of a solder layer or thin (Sn) layer.

33. (Currently Amended) An array type choke coil according to claim 1, ~~2, 9, 13 or 22~~, wherein the magnetic material is provided with an indication area indicative of the input terminals or output terminals or both.

34. (Currently Amended) An array type choke coil according to claim 1, ~~2, 9, 13 or 22~~, wherein the magnetic material is formed in a rectangular prism form.

35. (Currently Amended) An electronic apparatus characterized by mounting an array type choke coil according to claim 1, ~~2, 9, 13 or 22~~.

36. (New) An array type choke coil according to claim 6, wherein a predetermined inductance value is obtained by changing respective distances between a center point of the coil selected and center points of the both coils arranged immediately adjacent.

37. (New) An array type choke coil according to claim 13, wherein the coil group structure arranges the plurality of coils all in line.